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STEEL AND RELATED INDUSTRIES STUDY

A Proposal

October 1976

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Mr. C.T.C. Armstrong
Regional Coordinator
Regional Municipality of
Hamilton-Wentworth
P.O. Box 910
Hamilton, Ontario L8N 3V9

Dear Mr. Armstrong:

Steel and Related Industries Study

We are pleased to submit this letter of proposal outlining our approach and qualifications to undertake the Steel and Related Industries Sub-Study for the Regional Municipality of Hamilton-Wentworth, as outlined in the Terms of Reference attached to your letter of September 24, 1976.

In preparing this proposal, we have had the benefit of discussions with Mr. W. Morgan of the Regional Planning Division to obtain a closer understanding of the objectives and scope of the study. Further, we have had meetings with representatives of the Steel Company of Canada and Dofasco to obtain an up-to-date understanding of their production forecasts and their plans for new facilities.

The IBI Group is associating with R.A. Daly and Company Limited in this offer of consulting services. This association brings together the urban/regional planning and economic forecasting capability of IBI Group with the steel industry research capability of R.A. Daly and Company Limited.

① What is the study area?

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STEEL CONSUMPTION

Historically, the consumption of steel has increased at slightly higher than the growth in the Gross National Product. Canada consumes approximately 12-13 million tons annually of the total world consumption of 750 million tons. Canadian and world consumption is projected to increase at between four and five per cent over the next 10-25 years. In spite of expanding plant capacity, it is expected that the 1974 steel shortages will be experienced again by 1980. The Canadian steel industry is making major investments to attempt to meet the rapidly-growing Canadian steel market. These major investments both prior to 1980 and post-1980 will have major impacts on the future of the Hamilton area. The purpose of this study is to identify the different roles that Hamilton might play in the steel production industry in Canada and what the impact on Hamilton of these different roles might be.

Approximately two-thirds of steel production in Canada is for public and private sector capital investment, while the remaining one-third has been for the production of consumer durables--automobiles, metal containers, home appliances, etc. While events such as the auto industry's move towards smaller vehicles and the concern of environmentalists with throw-away metal containers suggest reduced steel consumption per capita in consumer durables in the future, an underlying long-term trend to increased steel consumption per capita and major capital investment in energy-producing plants and equipment are expected to more than compensate for reductions in consumer durable goods. This would support many forecasters' views that steel consumption will continue to increase in the near and long-term futures.

HAMILTON'S STEEL INDUSTRY

The metal-related industries - primary steel, metal fabricating, machinery and electrical products manufacturing - provide jobs for over 40,000 employees in Hamilton. This represents more than two-thirds of the manufacturing sector and approximately one-quarter of the total employment in the Hamilton-Wentworth Region. When one considers that economic growth is related to growth in the "basic" industry sectors - those sectors that export goods and services outside of the region - and that manufacturing is a very substantial portion of basic employment, the importance of the steel and related industries to Hamilton's future economic base is considerable. The diversification of the economic base in Hamilton through the creation of more specialized service sector jobs has been stated as a provincial objective on a number of occasions; however, the economic well-being of the Region is and will be dependent on the future of the steel industry for many years to come.

Events both inside and outside of the Region raise some questions about the future role of the steel industry in Hamilton. Within the Region, there is concern over the lack of sufficient serviced lands for expansion of both primary and secondary steel manufacturing industries. Stelco for example, has little, if any, room for expansion, while other firms are actively pursuing relocation of some or all of their operations.

While the Regional Municipality is able to cope with the provision of serviced lands within its jurisdiction to some extent, events outside the municipality are less controllable, at least from the municipality's point of view, and possibly more far-reaching. Probably most talked about is the new Stelco steel mill in Nanticoke and Stelco's plans for the

development of an industrial park in that area. As the steel production capability in Nanticoke becomes more mature, one could conceivably see a significant portion of the growth in the metal industry happening in Nanticoke, and some relocation of existing Hamilton-based industries.

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Other actions by senior governments and industry could conceivably impact the Hamilton steel and metal working industries. These include freight rates, exchange rates, interest rates, import/export policies, the business environment in Canada, changing preferences in consumer goods, changing technology, and regional economic development policies of other governments. Examples of the impacts of the latter policy could be the construction of steel mills in Nova Scotia, British Columbia and Alberta which, depending on the product lines of these mills, could affect the growth of the steel and metal-related industries in Hamilton.

OBJECTIVES OF STUDY

Clearly, there are a number of different roles that Hamilton might play in Canada's steel industry. The objective of the steel and related industries sub-study is to identify these alternative roles and the actions required by various agencies and government levels to achieve these different roles as a basis for the Region to prepare an economic development policy. Specifically, the Terms of Reference describe the objectives of the study as:

"1. Provide an over-view of the future of the steel industry in Canada and the study area's future importance in that industry. This will include an examination of future demand, production and technological change in the steel industry. Some importance should be given to the possible effects which technological change might have on employment in the steel industry.

2. Analyze the spatial and industrial nature of linkages that exist between the various components of the metal industry complex within the study area and those linkages which extend outside the study area. The impact and economic development significance of these linkages in future growth of the metal industries complex, both within and outside of the study area will be analyzed and discussed.

3. Develop forecasts of the broad spatial and industrial distribution of employment in the years 1986 and 2001 for the metal industry complex in the study area.

4. To provide broad economic development policy guidelines for planning in Hamilton-Wentworth in response to anticipated changes in the steel industry complex."

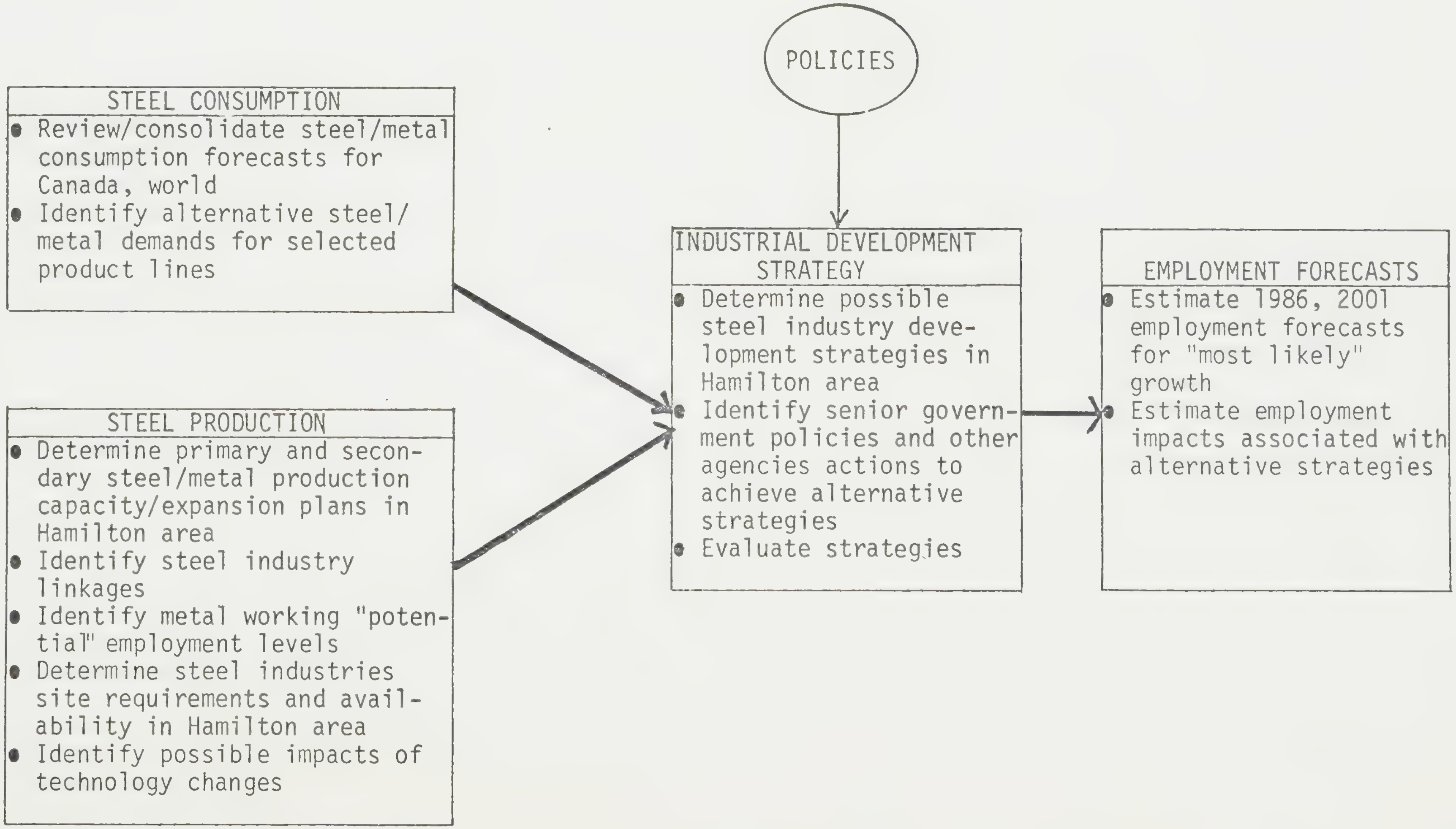
PROPOSED STUDY APPROACH

The product of this study will be a Regional economic development strategy for the steel and related industries in Hamilton-Wentworth. This will outline the development policies and actions to be taken by the Regional Municipality and by other agencies and governments to ensure the continued operation and growth of the steel and related industries and ancillary service industries in Hamilton. One of the outputs of the study will be a "most likely" employment projection by industry groupings (approximately 5-10 groupings) in the Region for 1986 and 2001, to be used as input to the Regional Official Plan. In addition to the "most likely" employment projections, estimates of the possible variations of these forecasts will be presented reflecting future events both within and outside of the Region.

The focus of the policy analysis and the detailing of the economic development strategy will be for the five and ten-year periods, while the employment projections will correspond to the 25-year period. Focussing the policy analysis on the short to intermediate terms is consistent with the significant lead time in the planning and construction of steel production

EXHIBIT 1

THE STEEL AND RELATED INDUSTRIES STUDY: WORK PROGRAM



STEEL CONSUMPTION

- Review/consolidate steel/metal consumption forecasts for Canada, world
- Identify alternative steel/metal demands for selected product lines

STEEL PRODUCTION

- Determine primary and secondary steel/metal production capacity/expansion plans in Hamilton area
- Identify steel industry linkages
- Identify metal working "potential" employment levels
- Determine steel industries site requirements and availability in Hamilton area
- Identify possible impacts of technology changes

POLICIES

INDUSTRIAL DEVELOPMENT STRATEGY

- Determine possible steel industry development strategies in Hamilton area
- Identify senior government policies and other agencies actions to achieve alternative strategies
- Evaluate strategies

EMPLOYMENT FORECASTS

- Estimate 1986, 2001 employment forecasts for "most likely" growth
- Estimate employment impacts associated with alternative strategies

facilities, while the longer term examination of the employment implications reflects the 20-year-plus economic life of the capital investment.

We propose four areas of investigation in this study, as shown in Exhibit 1:

1. Steel consumption trends for the nation in aggregate and for selected major products.
2. Steel production in both the primary and secondary sectors and the nature of linkages or flow of goods and services among industries.
3. Identification of alternative policies and programs of the public and private sectors which will affect the role of Hamilton in the steel industry.
4. Employment forecasts recognizing productivity gains and possible changes in technology.

These four areas of investigation are described below.

Consumption of Steel and Related Products

As mentioned above, there appears to be good agreement among steel industry forecasters regarding future consumption. While there are substantial year-to-year variations, the long-term trend appears to be for increases in the four-five per cent per annum range. Considering the short duration of the study and the policy nature of the work, it would appear that development of steel consumption forecasts would be wasteful of resources and redundant. Accordingly, we propose to review available steel consumption forecasts nationally and world-wide and discuss the magnitude of possible variations from these projections and how these might impact the metal complex in Hamilton.

In view of the significance of the following steel sectors and the possibility of major events occurring in each, we propose to examine in more detail steel consumption with respect to:

- the future of the auto industry in terms of the impacts of smaller cars, or the greater dependence on public transit in the face of higher energy costs
- the possible impact of legislation to reduce the use of metal containers for packaging food and beverage products and other consumer durables
- the possible impacts of major energy projects, such as the construction of gas pipelines in northern Canada.

Steel and Metal Related Production

Available steel consumption forecasts, at least over the next ten years, are probably quite reliable and consistent. Any variation on a long-term trend basis is most likely to be minimal, and thus the impact on steel production in Hamilton will also likely be minimal.

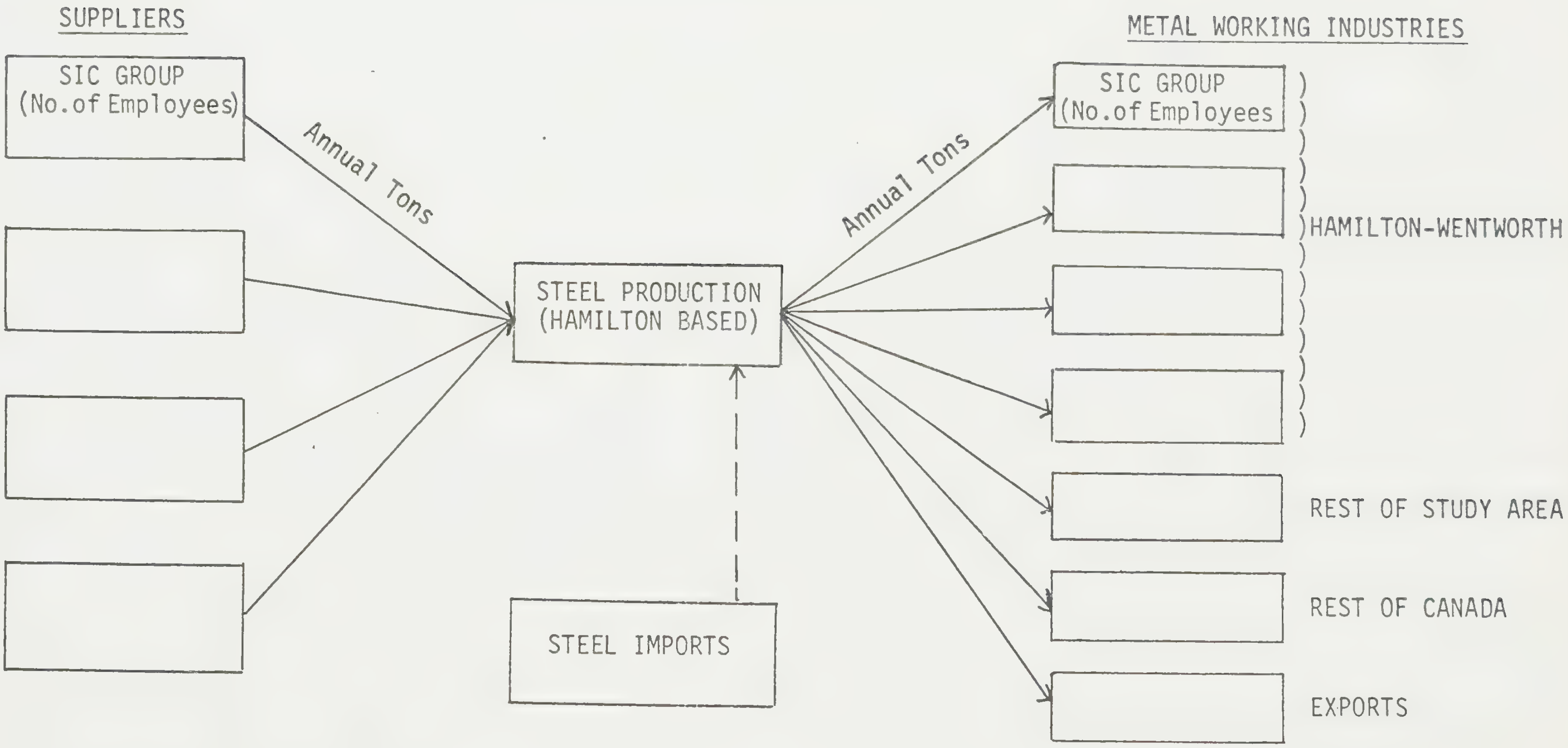
Far more important in terms of the impact on Hamilton is the portion of Canada's future steel production and metal working capacity which is developed in Hamilton. This relates to physical plant/site capacities, linkages among industries, and government and private sector policies and programs. The assessment of the steel and related industries production capacities in Hamilton is therefore one of the key tasks in this study.

The objective of this task would be as follows:

- to determine those steel and related industries which might relocate
- to determine the potential expansion of the existing industries and what portion of the Canadian growth might be captured in Hamilton

EXHIBIT 2

EXAMPLES OF LINKAGE TABLE



- to identify new industries that might be attracted to the area.

To determine the industries which might relocate, we would propose to review the 1975 Business Survey carried out by the Regional Municipality and contact those major industries which have indicated the possibility of relocation. We would determine from these interviews and from the surveys, the reasons for the relocation, the impact in terms of production and employment and possible situations and programs to encourage the industry to stay within the Region. We would also select some large metal industries that have already relocated to determine the reasons for their relocation.

The assessment of the growth that can be expected in the existing industries would involve relating projected steel/metal consumption with estimated steel/metal production capacity that can be developed in the Region. We would propose to interview a number of the major steel/metal working industries in the Hamilton area to obtain information regarding plant capacity, site capacity for expansion, expansion plans, materials used and products shipped, labour requirements both existing and future, and general comments regarding the advantages and disadvantages of the Hamilton area. From these interviews, the earlier surveys carried out by the Region, and our steel/metal production data, we would develop a"linkage table" as shown in Exhibit 2 which would indicate the inter-industry flow of goods and the number of employees in selected sectors in Hamilton.

For future years, alternative steel/metal production forecasts would be prepared, firstly using the steel consumption forecasts and assuming Hamilton continues to attract its historical share of the metal working

industries. Comparing this forecast of steel production with developable capacities indicates the expansion which can be accommodated in the Region and that expansion which might be forced to locate in other areas.

In terms of attracting new industries, we would identify the potential levels of steel/metal production in the area by comparing the existing levels of production and employees per capita in various industries with Canadian levels and with levels in other metal industry complexes such as in Michigan and Ohio. This analysis would identify sectors in which Hamilton is currently deficient or where Canada is currently deficient and which should be considered for future growth. For example, research by the Ontario Ministry of Industry and Tourism indicated that the metal working activity in Canada is one-quarter to one-half of the level in the United States which would suggest that significant growth potential exists in Canada and in Hamilton in particular. From these potential levels of production, we would use our linkage table to determine the capacity of the steel/metal industry in Hamilton to produce and the consequent impacts on other sectors, both forward and backwards.

Finally, we would undertake an assessment of both the feasibility and desirability of attracting additional metal working industries to Hamilton, considering such feasibility criteria as strength of linkages, land/site requirements, industry growth, and such desirability criteria as incomes, labour content, multiplier effects, and so on. We have undertaken this type of analysis in a number of other studies, so that we would be able to rely to some extent on this earlier work.

Steel and Related
Industries Development Strategy

The product of this task will be a description of the"most likely" role of Hamilton in the steel and related industries, based on current consumption and production trends, technology and apparent government policy direction. In addition, other possible roles of Hamilton in the steel industry will be identified and described, along with the actions by senior governments or by industry, or other agencies to achieve these roles.

This task would first involve an identification of the possible policies and events both within and outside of the Region which might affect steel/metal products consumption on a national scale and production in the Hamilton area. These policy possibilities would evolve from our discussions with industries in the area and through our comparison of likely and potential steel/metal production with steel consumption. The broad policy alternatives which would generate these different roles in Hamilton were outlined above. Examples of three different roles in Hamilton are described in the following.

A development possibility that must be considered which would likely represent the minimum role of Hamilton in the steel industry would stem from significant delays in adding additional steel production capacity at Dofasco and Stelco in Hamilton, accompanied by increased production at other locations, such as Algoma Steel in Sault Ste. Marie, Cansteel on the east coast, and a possible new plant on the west coast. This could happen if industry in the Hamilton area encounters difficulties expanding plant capacity due to physical and financial constraints, coupled with the joint government/private sector efforts to develop steel production capacity in less-industrialized sectors of the country. These new plants might be

used to "feed" the metal working complex in Hamilton, or might compete in terms of product lines, either of which would have substantially different impacts on Hamilton's steel industry.

Another scenario which would see more of the steel industry growth happening in the Hamilton area would stem from major investments by Dofasco and Stelco at their respective plants in Hamilton and Nanticoke, and the associated growth of the secondary metal industry complex in industrial parks in Hamilton and in the Nanticoke Industrial Park. With improved transportation linkages between the Hamilton and Nanticoke sites, one could see major growth in the steel industry complex in Hamilton and the surrounding regions/counties.

A third possibility which appears very real at this time would result from further delays in the expansion of steel production phases at Nanticoke, and the construction by Dofasco of a hot-rolling mill in Hamilton. From our discussions with industry representatives, it appears that Dofasco has reached its hot-rolling capacity and Stelco is very close to capacity. In view of the slow recovery of the Canadian steel industry, we do not envisage the construction of two hot-rolling mills in the industry at this time. Considering current commitments of Stelco at Nanticoke, and the production requirements of Dofasco, there is a good possibility that Dofasco might construct the next hot-rolling mill in Hamilton. In this scenario, Stelco would produce semi-finished steel and ship it back to Hamilton for further processing, likely resulting in the slower development of the Nanticoke Industrial Park and potentially more rapid growth in the Region of Hamilton-Wentworth.

THE PROJECT TEAM

The project team would comprise the following persons:

- R.A. McNally, Study Director
- J.M. Choukroun, Policy Analyst
- N. Moffat, Primary Steel Industry Analyst
- D. Macunovich, Linkages Analyst
- A.L. Jacob, Employment Forecasting Analyst.

Mr. R.A. McNally is a Director of IBI Group with responsibilities in the urban and regional planning area. Mr. McNally has recently directed four projects which have involved economic base components for the following areas: Region of Peel, Region of York, Region of Sudbury, County of Victoria. Mr. McNally acted as Executive Secretary of the Central Ontario Lakeshore Urban Complex Task Force, an inter-ministerial task force of the Ontario Government charged with detailing the Toronto Centred Region Concept. He was involved in the population/employment and travel demand forecasting phase of the Hamilton Rapid Transit Development Program carried out by a consortium of consultants on behalf of the Hamilton Street Railway.

Dr. J.M. Choukroun is an Associate in IBI Group and has post-graduate degrees in regional science and city planning. His area of expertise is urban and regional economic analysis and forecasting, economic theory, development of econometric models and transportation economics. He was involved in the economic base studies undertaken on behalf of the Regions of York and Peel and on the COLUC Task Force, and has undertaken on behalf of Transport Canada, studies regarding national transportation policy, commodity flows, freight rates and transport costs. Dr. Choukroun has been

heavily involved in the firm's work for the Toronto Area Airports Project in the development of economic forecasting techniques and analysis of the relationships between aviation activity and levels of economic activity.

Mr. N. Moffat is a Senior Research Analyst with R.A. Daly and Company Limited and is responsible for the firm's research of the steel sector. Over the past five yeras, Mr. Moffat has followed developments in the steel industry in Canada and world-wide and prepared short and medium-term forecasts of steel consumption and production as a basis for investment decisions by major investment institutions. Mr. Moffat has collected over the years substantial amounts of information regarding steel consumption, production and linkages, and has developed key contacts with persons in the steel industry.

Ms. D. Macunovich is a Senior Planner with the IBI Group. Her areas of specialty include urban and regional planning, economic, population and employment forecasting, and systems analyses and model development. She has recently played a major role in the Economic/Employment Supplement Study carried out by the firm on behalf of the Region of Peel. This study involved an assessment of industrial sectoral strengths and weaknesses in the Region of Peel and prospects for growth. In addition, she has been heavily involved in the firm's work for the Toronto Area Airports Project, primarily in the economic impact analysis of airport development and linkage relationships between airport-related industries and other industries.

Mr. A.L. Jacob is an Associate of IBI Group and specializes in economic and financial analysis and forecasting. Mr. Jacob has been responsible for a number of planning, market research and economic and development impact

studies including an office space/employment forecasting study for the City of Toronto, a study of the impact of transportation facilities and accessibility on residential and industrial development, and an office/commercial study on behalf of the City of Welland. He has examined the land and development economics of projects for a number of private sector clients.

Biographies of these personnel are presented in Appendix A.

TIME AND COST

Provided that we received authorization to commence work on the study by October 25, we would anticipate being able to complete our industry interviews, policy analyses and a draft final report by December 22, as specified in the Terms of Reference. Provided that comments on the draft final report were received by January 12, 1977, we would be prepared to submit the final report in 30 copies on January 19, 1977.

We would be prepared to undertake the work as outlined in this proposal for a fixed cost of $25,000. This cost estimate is comprised of $22,000 for professional fees and $3,000 for technical services, travel expenses, report production and other miscellaneous expenses. We would submit invoices on a monthly basis in amounts corresponding to the estimated percentage completion of the work.

QUALIFICATIONS OF IBI GROUP

IBI is a group of companies providing consulting services in a broad range of areas. The firm has offices in eight cities across Canada and has on staff approximately 65 persons with considerable experience and skills in the fields of urban and regional planning, economic analysis and forecasting, industrial site location, real estate development, housing

policy analysis, market analysis, transportation planning and operations and urban design services.

The following is a summary of some of our more important consulting engagements which provide us with the experience and qualifications to undertake this work:

- economic base studies in conjunction with official plan work in the Regions of Peel, York and Sudbury, the County of Victoria and the City of Mississauga
- office employment and market studies for the City of Toronto, the Town of Whitby, and the City of Welland
- housing policy studies for the Region of Haldimand-Norfolk, Town of Pickering and the Ministries of Housing in Ontario and British Columbia
- strategic policy advice and consulting assistance to the Ministries of Treasury, Economics and Intergovernmental Affairs, Housing and Transportation and Communications in Ontario and to the COLUC Task Force
- strategic policy advice to the National Transportation Policy Task Force of Transport Canada
- railway, ports and airport planning, operations and impact studies.

Staff of our firm have performed work in the Region of Hamilton-Wentworth which, although not directly related to this project, make us familiar with the issues in the Region. These projects include the Hamilton Transportation Strategy Study, the Hamilton Rapid Transit Development Program and the design of approximately 100 dwelling units on the Mountain.

QUALIFICATIONS OF
R.A. DALY AND COMPANY LIMITED

Founded in 1916, R.A. Daly and Company Limited is one of Canada's older investment dealers. The Company maintains offices in Toronto and Montreal offering a range of services to both individual and institutional investors alike. Particular emphasis is placed on institutional research to which the Research Department devotes the bulk of its time and effort. Composition of the Department is made up of six analysts and a research director, who are responsible for publishing on-going analyses of major industries within Canada which, in addition to the Canadian steel industry, include: pulp and paper, oil and gas, financial, mines and metals, merchandising, and utilities. R.A. Daly, in addition to its investment-oriented research, has provided consulting services in its areas of specialization. Recently, our pulp and paper analyst acted as a consultant in a project in Malaysia undertaken for the World Bank.

A brief outline of the newsletters prepared by R.A. Daly and Company Limited on a regular basis are presented below. These newsletters discuss the future profitability of major industries in Canada based on forecasts of production and profit and loss in these industries, to be used by major institutions making investments in the stock market.

- Commentary (six times a year) - an analysis and discussion of suggested investment posture and conditions existing in the New York stock market plus a detailed analysis of timely and important areas in economics, agriculture, finance, etc.
- Money Matters (monthly) - a review of current trends in the major monetary aggregates and a discussion of current Bank of Canada policy positions and implications for interest rates

- The Canadian Forest Products Industry (quarterly) - an analysis of the current situation and the outlook for major sectors of the Canadian forest products industry including pulp, newsprint, lumber and paper and paperboard
- Health of the Consumer (quarterly) - an examination and monitor of developing trends in the consumer sector of the Canadian economy
- Trends in Retail Trade (quarterly) - an analysis of current conditions in Canadian retailing
- World Metals Review (semi-annually) - a detailed analysis and forecast of conditions in the major metals areas
- Weekly Research Notes - short notes on a weekly basis dealing with matters likely to have effect on stock prices in the short term.

An example of one of the publications is attached in Appendix B.

We appreciate the opportunity to submit this offer of consulting services to the Regional Municipality of Hamilton-Wentworth to undertake the Steel and Related Industries Sub-Study. We have brought together a team comprising persons with experience in urban and regional planning and economic and employment forecasting, and specific experience in the economics of the steel industry. We feel that we have the experience, capabilities and contacts with the steel/metal industries in Hamilton and in Canada to undertake this project in the very tight schedule outlined in the Terms of Reference. We would be pleased to meet with the Study Coordinator and representatives of the Regional Municipality to outline

our qualifications on October 18. We hope we will have the opportunity to work with the Regional Municipality on this most interesting project.

Yours very truly

IBI GROUP

R.A.McNally
Director

RAM/ls
Encl.

APPENDIX A

BIOGRAPHIES OF PROJECT TEAM

R. ANDREW McNALLY

POSITIONS:

Director - IBI Group
Director - InterBase Incorporated

MEMBERSHIPS:

Association of Professional Engineers of Ontario
Association of Professional Engineers of Saskatchewan
Institute of Traffic Engineers
Registered Consulting Engineer, Ontario

EDUCATION:

B.A. Sc. (Civil Engineering), University of Toronto, 1964
M.A. Sc. (Transportation Planning), University of Toronto, 1965

EXPERIENCE:

1973-1974
Director, Urban Transportation Planning, Peat, Marwick and Partners
1970-1973
Senior Transportation Planner, Peat, Marwick and Partners
1967-1970
Transportation Planner, Peat, Marwick and Partners
1965-1967
Transportation Planner, Traffic Research Corporation

CONSULTING PROJECTS:

Mr. McNally has directed a number of consulting projects in the fields of transportation planning and feasibility analysis, transit operations and planning, and regional planning and development for various levels of government and public agencies, such as:

- Ministry of Transport, Canada
- Ministry of Transportation and Communications, Ontario
- Ministry of Treasury, Economics and Intergovernmental Affairs, Ontario
- Department of Highways and Transportation, Saskatchewan
- International Bank for Reconstruction and Development (World Bank)
- City of Regina, Saskatchewan
- City of Liverpool, U.K.
- City of North Bay, Ontario
- Town of Whitby, Ontario
- Metropolitan Toronto Planning Board
- Regional Municipality of Sudbury
- Regional Municipality of Durham
- Canadian National Railways
- City of Vancouver, British Columbia
- Regional Municipality of Peel
- County of Victoria
- City of Welland
- Hamilton Street Railway

R.Andrew McNally

SELECTED
MAJOR PROJECTS:

Some of the engagements which Mr. McNally has been involved in recently include the following:

Regional Municipality of Peel: Directed the Region of Peel Economic/Employment Supplement Study which involved an analysis of the strengths and weaknesses of the Peel economic base by detailed industrial sector, and identified options for growth.

County of Victoria: Directed an economic base and financial impact study for the County, as input to the Official Plan.

Regional Municipality of York: Project coordinator directing a multi-disciplinary team of municipal and consultant staff to identify and evaluate alternative urban "development choices" for the Region, as the basis for preparing the Region's Official Plan.

Regional Municipality of Sudbury: Co-director of the Economic Base Study for the Region which examined a number of industrial growth strategies and evaluated these from "desirability" and "feasibility" perspectives.

Ministry of Transport, Canada: Directed a team of Federal Government and consulting staff in the development of a ground access strategy and the evaluation of alternative passenger terminal concepts for the new Toronto International Airport.

Ministry of Treasury, Economics and Intergovernmental Affairs, Ontario: Executive Secretary of the Central Ontario Lakeshore Urban Complex Task Force, an inter-ministry task force of the Province of Ontario charged with translating the Toronto-Centred Region policy statement into provincial programs.

International Bank for Reconstruction and Development: Director of the transportation component of the Bogota Urban Development Study, a multi-disciplinary planning and development study for Bogota, Colombia, sponsored by the United Nations Development Program.

Saskatchewan Department of Highways and Transportation: Project manager of the Regina Environs Transportation Study.

City of Regina and Transportation Development Agency, Ministry of Transport: Designed one of Canada's first and largest dial-a-bus (Telebus) demonstration projects in Regina, Saskatechewan.

Ministry of Transportation and Communications, Ontario: Director of the transportation component of the Oshawa Area Planning and Development Study, a multi-disciplinary planning, development and regional government study for the area which is approximately represented by the present Region of Durham.

City of Liverpool and Ministry of the Environment (U.K.): Technical director of the Merseyside Area Land Use and Transportation Study (Liverpool, U.K.). A project to prepare a development plan and transportation program for the Liverpool area.

JEAN - MARC CHOUKROUN

POSITION:
Associate - IBI Group

MEMBERSHIPS:
Regional Science Association
Transportation Research Board

EDUCATION:
Ingenieur de l'Ecole Polytechnique (Paris, France) - Promotion 1963
Master of Arts (Regional Science) - University of Pennsylvania - 1969
Master of City Planning - University of Pennsylvania - 1970
Ph. D. (Regional Science) - University of Pennsylvania - 1972

LANGUAGES:
English
French

EXPERIENCE:
1973-1974
Senior Consultant - Peat, Marwick and Partners, Toronto
1971-1973
Assistant Professor - Faculty of Environmental Studies, York University, Toronto
1969-1971
Professeur Adjoint - Institut d'Urbanisme, Universite de Montreal
1970-1973
Research and Professional practice in urban/regional analysis and planning
1968-1969
Instructor - Dept. of City Planning, University of Pennsylvania
Research Assistant - Regional Science Research Institute, Philadelphia, Pa.

Dr. Choukroun has lectured extensively on statistical and econometric methods, economic theory, urban/regional economic analysis, land use and transportation models. He has also published several articles.

CONSULTING PROJECTS
Dr. Choukroun has directed and participated in a number of consulting and research assignments in the areas of urban/regional planning, regional analysis, transportation planning, public policy analysis and organizational management on behalf of clients such as:

- The Ministry of Transport (Canada)
- The Department of the Environment (Canada)
- The Minsitry of State for Urban Affairs (Canada)
- The Ontario Ministry of Treasury, Economics and Intergovernmental Affairs
- The Ontario Ministry of Transportation and Communications
- The Ontario Ministry of Housing
- Central Mortgage and Housing Corporation

- The Metropolitan Toronto Planning Department
- The Regional Municipality of York (Ontario)
- The Regional Municipality of Peel (Ontario)
- Various Municipalities in Ontario
- Commission Intermunicipale Argenteuil - Deux Montagnes (Quebec)
- The Management Science Centre, Philadelphia, Pa.
- The Transportation Development Agency (Canada)

CONSULTING
EXPERIENCE

Some of the research and consulting projects Dr. Choukroun has been involved in are described below:

Canadian Ministry of Transport: Major participation in the studies of freight transportation being carried out as part of the review of National Transportation Policy. In particular, the work includes an analysis of commodity flows across Canada; an investigation of freight rates and transport costs and of the factors affecting them on the supply and demand sides; an evaluation of the commercial viability of major transportation infrastructures; an assessment of the level of effective competition within the transportation industry and its effect on rates and costs; and an estimation of the elasticity of demand in relation to the policy of transportation services for various commodities.

Canadian Ministry of Transport, Toronto Area Airports Project: Major responsibility in all aspects of the socio-economic impact of airport development including a detailed evaluation of the effects of airport development on the pattern of regional development (by use of a growth allocation model); an analysis of the relationships between aviation activity and the level of economic activity; the development of alternative noise compensation policies and an assessment of their costs; the forecast of on-airport employment and its multiplier effects; the provision of strategic planning advice.

Regional Municipality of Peel (Ontario): Short term and long term forecasts of the regional economic base by various categories of employment.

Regional Municipality of York (Ontario): Assisted in the economic base studies as input to the Regional Official Plan. In particular, was responsible for developing the forecasts of industrial employment in the Region.

Groupe de Travail Sur l'Habitation (Quebec): Review and evaluation of Ontario Housing Programmes on behalf of the Quebec Housing Task Force.

Ontario Ministry of Transportation and Communication: Development of a simplified method for assessing the impact of transportation facilities on the distribution of urban activities.

Central Ontario Lakeshore Urban Complex (COLUC) Task Force (Ontario): Application of the Empiric Growth Allocation Model for the testing of alternative development policies for the Toronto Region.

North Pickering Project and Metro Toronto Planning Department: Study of the potential future distribution of service employment in the Toronto Region, including the identification of candidate sectors for decentralization and the recommendation of specific actions to stimulate decentralization.

Ministry of State for Urban Affairs (Canada): Development of a scenario approach to assist the Ministry in assessing priorities for urban development policies.

Department of the Environment (Canada): Evaluation of the Department's grant programme to universities.

International Functions of Paris: Assisted the Management Science Centre (Philadelphia, Pa.) on developing strategies for strengthening the role of Paris as an international centre of an economic activity and decision-making.

Commission Intermunicipale Argenteuil Deux Montagnes (Quebec): Formulation of an economic development strategy for this area to the west of Montreal, with particular emphasis on its recreational potential and the linkages with the new Mirabel Airport.

NORMAN D. MOFFAT

POSITION:
Senior Steel Industry Analyst - R.A. Daly and Company Limited

EDUCATION:
University of Western Ontario (London, Ontario) 1965-1969
Bachelor of Engineering Science - Civil Engineer

Upper Canada College (Toronto, Ontario) 1960-1965
Senior Matriculation

EXPERIENCE:
R.A. Daly and Company Limited (Investment Dealer)
P.O. Box 42, Toronto-Dominion Centre, Toronto, Ontario
Investment Research Analyst - responsibilities involve an on-going analysis in three major areas: The Canadian Steel Industry; The Capital Goods Industry in Canada; and The Electric & Gas Utility Industry. In addition analysis is carried out on selected companies that fall within these areas.

Industry and company reports are published which are marketed to investment institutions. Regular communication with these investment institutions is required together with the development and presentation of seminars outlining our views in these areas.

As a requirement for the research function, regular contact is maintained with corporate executives in the steel, capital goods and utility industries, as well as various personnel at the National and Ontario Energy Boards.

DIANE J. MACUNOVICH

POSITION:
Urban/Regional Planner and Systems Analyst - IBI Group

EDUCATION:
B.Sc. (Mathematics and Humanities) M.I.T. 1966

EXPERIENCE:

1974
Peat, Marwick and Partners, urban and regional planning consultant.

1972-1973
Milton Keynes Development Corporation, Milton Keynes, U.K.
Assistant chief planner (and systems analyst) corporate planning group.

1971
Department of Civic Design, University of Liverpool, England. Lecturer in analytical techniques in urban and regional planning.

1970
Peat, Marwick, Mitchell & Co., London, England. Transportation and planning consultant.

1969
Austin-Smith/Lord Partnership, London, England, planning consultant.

1968
Planning and Transport Research and Computation Co., London, England. Planning consultant.

1966-1967
Abt Associates Inc., Cambridge, Massachusetts, consultant.

1962-1966
National Bank of Detroit, Detroit Michigan, research analyst.

CONSULTING PROJECTS:
Ms. Macunovich has directed and participated in a variety of planning studies, research projects and systems development and modeling work on behalf of clients such as:

- Department of Urban Affairs
- Ministry of Transport (Toronto Area Airports Project)
- City of Mississauga
- U.K. Office of Overseas Development
- City of Liverpool, England
- Imperial College, London, England
- Warrington Development Corporation, England
- McGraw-Hill Publishing Co.
- Northwest Regional Education Laboratory, Vancouver, Washington
- U.S. Department of Health, Education and Welfare
- U.S. Department of Commerce, Northwest Corridor Project
- U.S. Department of Housing and Urban Development.
- Region of Peel
- Town of Pickering
- Province of Quebec
- Region of Haldimand - Norfolk
- City of Welland

Diane J. Macunovich

CONSULTING
EXPERIENCE:
Some of Ms. Macunovich's recent engagements include the following:

City of Mississauga: Evaluation of current development control procedures and preparation of guidelines for future development control mechanisms to implement a new Official Plan. Population and employment forecasting.

Department of Urban Affairs: Analysis of the use of public land acquisition as a tool in the implementation of development plans, and design of a typology of strategic lands for public acquisition.

Toronto Area Airports Project, Ministry of Transport: Analysis and forecasting of economic linkages between industry and the airport in the Toronto Metropolitan Area.

Regional Municipality of Peel: Long-term economic and employment analysis and forecasting as input to the Regional Official Plan.

Pickering Housing Policy Study: Forecasting and assessing short and long term housing requirements for the Town of Pickering with emphasis on the achievement of a balance between employment and housing opportunities in the Town.

Quebec Housing Task Force: Review and evaluation of Ontario Housing Programs, and presentation of these programs in the context of the housing development process in Ontario.

Regional Municipality of Haldimand-Norfolk: Analysis of the Hierarchy of existing urban centres in the Region, and evaluation of the potential impact of short term high growth rates on the character and infrastructure of these centres.

City of Welland: Forecasts of demand for retail and office space in the downtown area.

ANDREW L. JACOB

POSITION:
Associate - IBI Group, specializing in planning and real estate economics

EDUCATION:
B.A. University of Toronto
M.A. University of Toronto
Ph.D. Student, University of Michigan

EXPERIENCE:
1973-1974
Consultant, Peat, Marwick and Partners
1972-1973
Senior Economist, Canadian Real Estate Research Corporation Ltd.

CONSULTING PROJECTS:
Mr. Jacob has been a member and project manager of a large number of planning, market research, and financial feasibility studies and investment analyses on behalf of such clients as:

- Western International Hotels
- Atliffic Management Ltd.
- City of Toronto
- Ontario Hydro
- Bell Canada
- Toronto Dominion Bank
- Shell Canada Ltd.
- Cadillac Fairview Corporation
- City of Toronto Planning Board
- Ryerson Polytechnical Institute
- Ministry of Transportation and Communications, Ontario
- Department of Public Works
- City of Welland
- CIAG
- Northward Developments Ltd.
- Maron Properties Ltd.
- Environment Canada

Andrew L. Jacob

CONSULTING EXPERIENCE:
Some of Mr. Jacob's recent engagements include the following:

City of Toronto Planning Board: Manager of a study to assess both the qualitative and quantitative impact of a proposed major shopping centre on existing retail facilities in East Toronto. The study included extensive interviews of shoppers in the area, an inventory and classification of existing stores, and an analysis of various demographic and economic data to estimate the impact of the centre on the retail facilities.

Ministry of Transportation and Communications: Manager of an assignment to develop an estimating methodology of the impact of transportation facilities on land uses.

City of Toronto Planning Board: Manager of the Real Estate and Land Economics section of an inter-disciplinary team that examined the possibility of using the Great Hall of Union Station as a transportation terminal. The study entailed an analysis of the land economics of alternative development schemes proposed by the study team with the original proposal of Metro Centre Developments.

Industrial Site Location Study: Manager of a study to ascertain the optimum location and find a suitable site for a manufacturer in Southern Ontario. The study entailed a detailed analysis of the company's production process, and the influence on profitability of such factors as land, transportation and labour costs, property taxes and the availability of local customers, suppliers and bonded warehousing.

Federal Department of Public Works: Manager of a study to provide a manual and a set of guidelines to compensate businesses expropriated under the Federal Expropriation Act. This assignment involved a thorough review of business valuation techniques and the interpretation of relevant jurisprudence. A follow-up assignment entailed the analysis and negotiation of compensation payable to forty expropriated owners of businesses.

Major Canadian Corporation: Ongoing assistance and advice on real estate investment and land development opportunities, including detailed financial viability analyses.

Ministry of Transport: Review and analysis of the financial performance of the Toronto Island Airport. Suggestion for project reorganization to rationalize costs and revenues.

Andrew L. Jacob

Major Canadian Real Estate Developer: Manager of a study to evaluate and analyze short and medium term land development and residential building opportunities in one of Canada's largest metropolitan areas.

Ontario Hydro: Part of a study team to estimate the effect of air pollution on property values. For the same client, managed a study to assess the impact of transmission towers on residential property values.

City of Toronto Development Department: Part of a study team that examined laws and regulations influencing the creation, rehabilitation and maintenance of rooming houses in the City of Toronto. Particular attention was paid to the economics of owning and operating rooming houses and what the impact of changing regulations would be on the economics of operating rooming houses, on rental rates and on social costs.

City of Toronto Planning Board: Manager of a study to establish the current and future office space ratios per employee in Toronto. Study also carried out forecasts of office employment and demand for office space.

APPENDIX B

EXAMPLE OF NEWSLETTER
PRODUCED BY R.A. DALY AND COMPANY LIMITED

RAD

R. A. DALY & COMPANY
LIMITED
INVESTMENT SECURITIES

EQUITY MEMO

WEEKLY RESEARCH NOTES

VOLUME III, No. 34

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WCG:mp
September 24, 1976

Statements made herein are based on information obtained from sources which are believed to be reliable but we cannot guarantee the accuracy or completeness of these. R.A. Daly & Company Limited, its directors and/or employees may from time to time have a position in the securities mentioned herein. The following includes the name of every person having an interest directly or indirectly to the extent of not less than 5% in the capital of R.A. Daly & Company Limited: R.A. Daly, Jr., D.C. Bainbridge, I.E. Quaggin and N. Lovatt

STEELS

A REVIEW OF THE PRESENT STEEL CYCLE AND MARKET PERFORMANCE

The Current Cycle

-- The recovery in domestic steel shipments and apparent steel consumption has again lagged the general economic recovery. (Table I) During the 1971-1974 economic recovery, Canadian steel demand (using year over year quarterly comparisons) lagged the recovery by approximately two quarters while during the present economic recovery, starting in April 1975, steel consumption and shipments have lagged by five quarters.

-- Over the past two quarters there has been increasing strength in steel products associated with consumer durable demand, and a general weakening in steel associated with the capital goods sector of the economy.

-- As shown in Table I, the underlying strength in the capital goods market as measured by total capital formation has not been as buoyant during the early stages of the latest recovery as during the previous 1971-74 cycle.

-- The general lag in overall steel demand, particularly in steel directed into the capital goods sector, has resulted in a very unfavourable product mix at Algoma and to a lesser degree at Stelco. It is our view that this situation could continue over the next three or four quarters.

TABLE I

ANNUALIZED RATES OF CHANGE

Quarterly Comparisons

	1971				1972				1973				1974				1975				1976	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Gross National Product*	3.7	5.6	7.7	8.9	6.6	6.9	4.6	5.6	8.6	6.3	6.7	7.1	5.2	4.0	3.2	0.6	-1.3	0.3	1.4	2.0	5.1	4.4
Total Capital Formation*	2.5	9.8	9.6	11.4	9.4	7.8	4.7	0.7	6.7	8.2	11.8	17.5	13.5	6.8	2.5	-1.4	-3.8	1.1	4.9	7.8	6.9	4.8
Consumer Durable Spending	6.2	10.4	12.6	22.8	19.5	16.1	13.8	13.6	21.3	17.3	16.3	14.0	9.6	10.7	8.9	-5.3	-2.5	-0.4	8.6	24.2	8.7	10.5
Apparent Consumption(1)	-17.0	2.7	12.6	28.5	23.2	15.0	3.7	-10.7	13.4	17.3	14.4	29.5	7.5	4.8	12.1	10.1	-3.5	-14.5	-15.4	-25.1	-12.7(2)	5.1(3)
Domestic Steel Shipments(1)	-11.0	1.1	6.7	17.8	14.7	12.2	4.5	2.9	14.4	12.5	16.2	17.4	8.2	4.7	3.9	0.6	-2.4	- 4.2	-11.4	-14.2	- 8.2(2)	3.3(2)

*Constant 1971 dollars seasonally adjusted at annual rates
(1) Centred three month moving average
(2) Actual data
(3) Actual data 2 months only

...continued

RAD

Relative Stock Market Performance

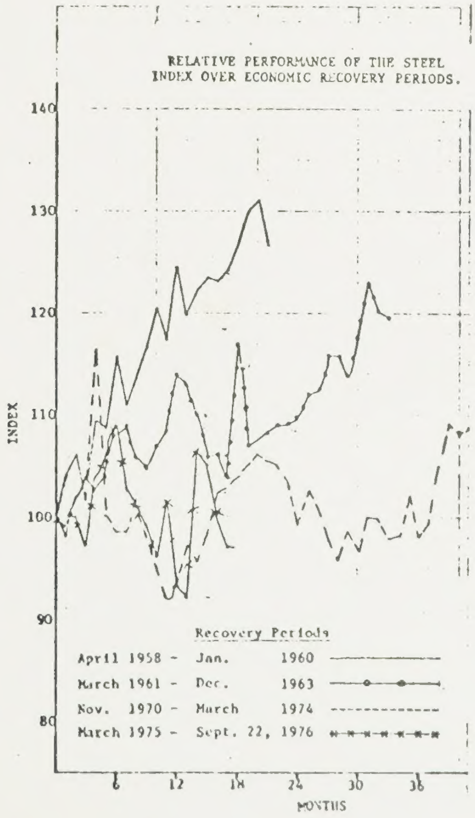
- The chart below illustrates the relative performance of the steel index during the past four economic cycles relative to the T.S.E. Industrial Index.

- Clearly a heavy weighting in steel stocks was desirable during the 1958-1960 and 1961-1963 economic recovery periods.

- More recently, in the 1971-1974 cycle, the performance of the steel group was about equal to the general market performance through the first three years of the economic recovery. However, during the latter stage of the recovery, some positive relative performance occured and continued beyond the economic peak. To date, through the first 18 months of the current cycle, the steels have performed similarly to the 1971-1974 cycle.

- It is our view that the fundamentals affecting steel demand and profitability will for the most part continue to lag previous recovery periods.

- Near term price appreciation will therefore be more importantly related to the general move in the market. It should be pointed out that given the current price levels and price earnings multiples, the downside risk on steel shares is minimal.



NORM MOFFAT

September 24, 1976